Being Creative in MARMC's Fab Lab isn't Rocket Science

By Chris Wyatt, Public Affairs Specialist

Culinary Specialist (CS) 2nd Class Kirstene Edwards, assigned to Mid-Atlantic Regional Maintenance Center (MARMC), completed MARMC's first digital manufacturing maintenance course Oct. 26.

The training course curriculum covers basic digital engineering design, mechanical and electronic principles.

"The purpose of this course was to take someone who had little to no experience in digital design and fabrication and teach them to work through a complex project," said Fab Lab Project Officer Lt. Todd Coursey. "The course contains a series of modules that each student will progress through with the goal being to turn their creativity into actual concepts and prototypes."

Edwards was the perfect Sailor for this course. She said that she's never taken an engineering course, she doesn't like to build things in her off time, she is not very well versed in electronic component design, but she wants to learn.

"I have zero experience building things," said Edwards. "The only thing I've ever built was an IKEA desk. I'm very excited to have been selected to take part in this class. I'm eager to learn and my goal is to be successful. My biggest fear is failure."

MARMC partnered with Massachusetts Institute of Technology's Fab Foundation and Teaching Institute for Excellence in Science Technology Engineering and Math to develop a three-week course that focuses on an introduction to digital design and fabrication, machining and designing of pre-selected projects, and a self-directed project. The class was spread over three months in an effort to reduce impact on the student's daily work responsibilities.

"During the first module, Edwards learned about the machines and how they worked, safety and what she can and cannot do," said Coursey. "During module two, Edwards really started to take hold and build off of pre-selected projects. You could see Edwards taking her everyday job as a CS and using the fabrication equipment to create things to make her job easier. She designed and printed an Aztec pyramid molding and filled it with chocolate and made candies for the class. She built and flew a remote controlled air plane and improved upon its design after each test flight."

Edwards used every skill she picked up over the course of the class during her final project. According to Coursey, soldering, 3D program instruction, component design and fabrication were all needed to make her final project a success. Edward chose to build an MP3 player from scratch.

“During module three, Edwards chose a pretty aggressive project in building a MP3 player,” said Coursey. “She went from knowing nothing about circuit boards or electronics to being able to build a functioning MP3 player. It’s quite astonishing to be honest; the real value of the lab isn't necessarily creating end products, but supporting the creative process and building the capacity and capability to build a deckplate understanding of emerging technologies.”

The success that Edwards and the other civilians and Sailors in the course, proves Coursey’s feeling that anyone can come into the Fab Lab and turn their creativity into working prototypes.

“At the Fab Lab, we are getting back to the basics,” said Coursey. “We are teaching operators to be more than just operators; we are teaching them to be better maintainers and empowering them to be the innovators of the future.”